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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## CHROMIUM IN JANUARY 1997

Chromite consumption increased by 6% in January 1997 compared with the previous month's data, according to the U.S. Geological Survey. Net production of chromium ferroalloys and metal in January 1997 increased 517% compared with revised data for December 1996. Chromite stocks increased 8% over the same period. At the January rate of consumption, chromium stocks represented 9 months of domestic supply.

Included in this Mineral Industry Surveys are: U.S. consumption and stocks of chromite; U.S. net production, net shipments, and stocks of chromium materials; U.S. Government inventory; and foreign trade for December 1996.

### Update

The Defense National Stockpile Center (DNSC) announced proposed revisions to the 1997 Annual Materials Plan (AMP) (covering October 1996 through September 1997) and the proposed 1998 AMP for the disposal of chromium materials.

Assuming no congressional changes, the proposed revised 1997 AMP becomes effective March 31, 1997; the 1998 AMP, October 1, 1997.

The DNSC reported chromite ore sales in February 1997. DNSC reported the sale of 45 tons of chemical grade chromite ore to Harbison-Walker Refractories Co. for \$1,250. DNSC also reported that no metallurgical chromite ore was sold. Chromite ore is offered for sale on the second Tuesday of each month. For further information contact DNSC at (703) 767-5497. The 1997 AMP, proposed revised 1997 AMP, and 1998 AMP are listed in table 8.

The Refractories Institute, a trade association, announced the availability of the *1997 Directory of the Refractories Industry*. This 350-page directory features information about U.S. refractory producers and their products, raw materials suppliers, equipment suppliers, contractors and installers, and service suppliers. The directory is available at a cost to domestic buyers of \$45 to members, \$85 to nonmembers, and to foreign buyers at a cost of \$100 from The Refractories Institute, 650 Smithfield Avenue, Suite 1160, Pittsburgh, Pennsylvania 15222-3907 or phone 412-281-6787 or Fax 412-281-6881.

TABLE 1  
U.S. SALIENT CHROMIUM STATISTICS 1/

(Metric tons, gross weight unless otherwise noted)

	1996			1997
	Nov.	Dec.	Jan.-Dec.	Jan.
Production:				
Chromium ferroalloys and metal: 2/				
Net production:				
Gross weight	571 r/	785 r/	36,800 r/	3,020
Chromium content	578 r/	686 r/	26,400 r/	2,220
Net shipments	1,090 r/	66 r/	38,800 r/	3,590
Stainless steel production 3/	(4/)	(4/)	1,920,000	NA
Components of U.S. supply:				
Stainless steel scrap receipts	47,200 r/	42,600 r/	579,000 r/	55,300
Imports for consumption				
Chromite ore	38,000	1,030	250,000	NA
Chromium ferroalloys 5/	4,920	27,300	420,000	NA
Chromium metals 6/	594	795	8,730	NA
Stainless steel	NA	NA	NA	NA
Stainless steel scrap	4	3	47	NA
Distribution of U.S. supply:				
Consumption:				
Chromite ore	17,200	19,900 r/	282,000 r/	21,000
Chromium ferroalloys & metals	25,300	26,000	289,000	NA
Exports:				
Chromite ore	1,390	1,060	69,400	NA
Chromium ferroalloys	1,450	6,200	15,800	NA
Chromium metals	93	89	1,330	NA
Stainless steel	NA	NA	NA	NA
Stainless steel scrap	21	25	303	NA
Stocks at end of period:				
Industry:				
Chromite ore:				
Chemical and metallurgical	184,000	165,000 r/	XX	179,000
Refractory	7,780	7,890	XX	7,450
Total	192,000	173,000 r/	XX	187,000
Chromium ferroalloys and metal:				
Producer	5,730 r/	6,450 r/	XX	5,870
Consumer	19,600	24,400	XX	NA
Government stockpile:				
Chromite ore	1,190,000	1,190,000	XX	1,180,000
Chromium ferroalloys	1,060,000	1,050,000	XX	1,040,000
Chromium metals	7,720	7,720	XX	7,720

r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes low- and high-carbon ferrochromium, chromium concentrates, ferrochromium, chromium metal, and other miscellaneous alloys.

3/ Data on stainless steel production from American Iron and Steel Institute, quarterly production of stainless and heat resisting raw steel.

4/ Not reported monthly.

5/ Includes high-, medium-, and low- ferrochromium and ferrochromium silicon.

6/ Includes waste and scrap and other.

TABLE 2  
U.S. GOVERNMENT STOCKPILE INVENTORY 1/ OF CHROMIUM MATERIALS 2/

(Metric tons)

Period	Chromite ore			Chromium ferroalloys			Chromium metal	
	Chemical	Metal-lurgical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	Ferro-chromium silicon	Alumino-thermic	Electrolytic
1996:								
January	220,000	750,000	328,000	738,000	283,000	52,900	2,670	5,020
February	220,000	739,000	328,000	738,000	283,000	52,900	2,670	5,020
March	220,000	722,000	328,000	738,000	283,000	52,900	2,670	5,020
April	220,000	717,000	328,000	738,000	283,000	52,900	2,670	5,020
May	220,000	694,000	328,000	738,000	283,000	52,900	2,670	5,020
June	220,000	658,000	327,000	738,000	283,000	52,900	2,670	5,020
July	220,000	655,000	322,000	738,000	283,000	52,900	2,670	5,020
August	220,000	655,000	322,000	738,000	283,000	52,900	2,670	5,020
September	220,000	647,000	322,000	734,000	283,000	52,700	2,670	5,050
October	220,000	645,000	322,000	732,000	283,000	52,700	2,670	5,050
November	220,000	645,000	322,000	725,000	283,000	52,700	2,670	5,050
December	220,000	645,000	322,000	718,000	283,000	52,700	2,670	5,050
1997:								
January	220,000	637,000	322,000	704,000	283,000	52,700	2,670	5,050

1/ Includes specification and non-specification grade materials and materials set aside for disposal but not yet shipped.

2/ Data are rounded to three significant digits.

Source: Defense National Stockpile Center.

TABLE 3  
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS AND METAL 1/

Period	Chromite ore		Chromium ferroalloys 2/			Chromium metal 3/	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
1995:							
December	1,420	\$205	528	289	\$639	157	\$1,520
Jan.-Dec.	17,800	3,430	9,360	5,540	12,500	714	7,820
1996:							
January	1,740	427	885	519	1,120	86	1,000
February	1,700	407	887	536	1,230	44	618
March	1,840	484	669	399	894	124	1,450
April	17,100	2,280	734	444	843	165	1,530
May	1,730	1,160	472	288	597	76	863
June	37,900	4,270	490	291	583	143	1,110
July	1,920	568	1,320	797	1,640	214	1,820
August	1,060	564	676	411	694	63	717
September	614	132	955	554	912	137	772
October	1,310	152	1,100	680	956	97	1,010
November	1,390	486	1,450	852	1,350	93	825
December	1,060	214	6,200	3,750	3,140	89	1,090
Total	69,400	11,100	15,800	9,520	14,000	1,330	12,800

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes low-, medium-, and high-carbon ferrochromium, and ferrochromium-silicon.

3/ Includes wrought and unwrought and waste and scrap.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE,  
FERROCHROMIUM, AND CHROMIUM METAL 1/

(Metric tons)

	1995	1996			
	Jan.-Dec.	October	November	December	Jan.-Dec.
Chromite ore:					
Not more than 40% chromic oxide:					
Gross weight	11,600	--	--	--	8,030
Chromic oxide content	4,120	--	--	--	2,650
More than 40% but less than 46% chromic oxide:					
Gross weight	14,800	--	5,810	--	25,400
Chromic oxide content	6,110	--	2,670	--	11,100
46% or more chromic oxide:					
Gross weight	226,000	19,600	32,200	1,030	217,000
Chromic oxide content	109,000	10,100	15,000	485	102,000
Total, all grades:					
Gross weight	253,000	19,600	38,000	1,030	250,000
Chromic oxide content	119,000	10,100	17,600	485	116,000
Ferrochromium:					
Low-carbon: 2/					
Gross weight	65,800	4,180	2,070	3,600	60,700
Chromium content	42,800	2,770	1,350	2,460	38,400
Medium-carbon: 3/					
Gross weight	7,570	--	--	--	36
Chromium content	4,930	--	--	--	23
High-carbon: 4/					
Gross weight	422,000	29,000	2,860	23,700	359,000
Chromium content	254,000	16,800	1,450	13,200	207,000
Total, all grades					
Gross weight	495,000	33,200	4,920	27,300	420,000
Chromium content	301,000	19,600	2,800	15,600	246,000
Chromium metal:					
Other than waste and scrap	6,930	758	573	795	8,670
Waste and scrap	109	--	21	--	58
Total, all grades	7,040	758	594	795	8,730

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Ferrochromium containing not more than 3% carbon.

3/ Ferrochromium containing more than 3% carbon but not more than 4% carbon.

4/ Ferrochromium containing more than 4% carbon.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN DECEMBER 1996,  
BY GRADE AND BY COUNTRY 1/

Country	December			January-December		
	Gross weight (metric tons)	Cr <sub>2</sub> O <sub>3</sub> (metric tons)	Value 3/ (thousands)	Gross weight (metric tons)	Cr <sub>2</sub> O <sub>3</sub> (metric tons)	Value 3/ (thousands)
Not more than 40% chromic oxide:						
Canada	--	--	--	20	8	\$3
Philippines	--	--	--	7,940	2,620	1,060
Venezuela	--	--	--	46	18	16
Zimbabwe	--	--	--	23	9	3
Total	--	--	--	8,030	2,650	1,080
More than 40% but less than 46% chromic oxide:						
South Africa	--	--	--	25,400	11,100	2,480
46% or more chromic oxide:						
South Africa	1,030	485	108	217,000	102,000	19,700
Total, all grades:						
Canada	--	--	--	20	8	3
Philippines	--	--	--	7,940	2,620	1,060
South Africa	1,030	485	108	242,000	113,000	22,100
Venezuela	--	--	--	46	18	16
Zimbabwe	--	--	--	23	9	3
Total	1,030	485	108	250,000	116,000	23,200

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes revised data from previous months.

3/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance and other charges incurred in bringing the merchandise to the United States.

Source: Bureau of the Census.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN DECEMBER 1996,  
BY GRADE AND BY COUNTRY 1/

Country	December			January-December		
	Gross weight (metric tons)	Chromium content (metric tons)	Value 2/ (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value 2/ (thousands)
<b>High-carbon ferrochromium: 3/</b>						
Albania	--	--	--	8,170	4,730	\$5,170
China	--	--	--	9,860	6,280	6,540
Croatia	--	--	--	9,430	5,880	6,110
Estonia	--	--	--	8,310	5,400	5,360
Finland	--	--	--	9,020	4,790	4,820
Germany	--	--	--	19	14	38
India	--	--	--	6,150	3,810	3,860
Japan	--	--	--	18	12	25
Kazakhstan	--	--	--	77,600	46,800	45,600
Russia	100	67	\$140	21,600	11,300	16,200
South Africa	14,800	7,520	5,460	105,000	53,400	45,100
Turkey	40	26	23	43,800	27,100	27,400
United Kingdom	17	11	29	2,030	1,090	973
Zimbabwe	8,720	5,540	4,650	58,200	36,700	35,300
Total	23,700	13,200	10,300	359,000	207,000	202,000
<b>Medium-carbon ferrochromium: 4/</b>						
Philippines	--	--	--	36	23	47
<b>Low-carbon ferrochromium: 5/</b>						
China	8	5	11	8,180	5,370	12,600
Croatia	--	--	--	20	13	17
France	--	--	--	141	98	294
Germany	1,110	773	2,570	9,080	6,310	20,800
India	385	264	534	1,360	933	2,220
Japan	76	51	213	533	345	1,380
Kazakhstan	--	--	--	152	106	257
Russia	1,710	1,160	2,550	18,000	11,900	27,200
South Africa	41	30	83	18,900	10,600	16,800
Turkey	--	--	--	902	652	1,890
United Kingdom	77	53	135	313	201	575
Zimbabwe	200	126	133	3,140	1,930	3,240
Total	3,600	2,460	6,240	60,700	38,400	87,200
<b>Total, all grades:</b>						
Albania	--	--	--	8,170	4,730	5,170
China	8	5	11	18,000	11,600	19,100
Croatia	--	--	--	9,450	5,900	6,130
Estonia	--	--	--	8,310	5,400	5,360
Finland	--	--	--	9,020	4,790	4,820
France	--	--	--	141	98	294
Germany	1,110	773	2,570	9,100	6,330	20,800
India	385	264	534	7,500	4,750	6,080
Japan	76	51	213	551	357	1,400
Kazakhstan	--	--	--	77,700	46,900	45,800
Philippines	--	--	--	36	23	47
Russia	1,810	1,230	2,690	39,700	23,100	43,400
South Africa	14,800	7,550	5,540	124,000	64,000	61,800
Turkey	40	26	23	44,700	27,800	29,200
United Kingdom	93	65	163	2,340	1,290	1,550
Zimbabwe	8,920	5,660	4,780	61,400	38,700	38,600
Total	27,300	15,600	16,500	420,000	246,000	290,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance and other charges incurred in bringing the merchandise to the United States.

3/ Ferrochromium containing more than 4% carbon.

4/ Ferrochromium containing more than 3% but not more than 4% carbon.

5/ Ferrochromium containing not more than 3% carbon.

Source: Bureau of the Census.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN  
DECEMBER 1996, BY GRADE AND BY COUNTRY 1/

Country	December		January-December	
	Gross weight (metric tons)	Value 2/ (thousands)	Gross weight (metric tons)	Value 2/ (thousands)
Waste and scrap:				
Canada	--	--	5	\$16
China	--	--	17	103
Japan	--	--	1	5
Russia	--	--	20	119
Sweden	--	--	16	69
Total	--	--	58	312
Other than waste and scrap:				
Australia	--	--	(3/)	2
Canada	--	--	1	7
China	97	\$657	1,520	8,830
France	199	1,580	1,530	12,000
Germany	5	43	243	2,240
Hong Kong	--	--	69	385
India	--	--	(3/)	11
Italy	--	--	(3/)	4
Japan	48	714	323	5,920
Korea, Republic of	--	--	2	8
Luxembourg	--	--	76	454
Netherlands	--	--	(3/)	2
Portugal	--	--	2	106
Russia	351	1,990	3,590	20,800
Spain	(3/)	4	2	42
Sweden	--	--	(3/)	2
Switzerland	--	--	4	26
Taiwan	1	3	9	114
United Kingdom	94	712	1,300	10,000
Total	795	5,700	8,670	61,000
Total, all grades:				
Australia	--	--	(3/)	2
Canada	--	--	6	23
China	97	657	1,540	8,930
France	199	1,580	1,530	12,000
Germany	5	43	243	2,240
Hong Kong	--	--	69	385
India	--	--	(3/)	11
Italy	--	--	(3/)	4
Japan	48	714	323	5,920
Korea, Republic of	--	--	2	8
Luxembourg	--	--	76	454
Netherlands	--	--	(3/)	2
Portugal	--	--	2	106
Russia	351	1,990	3,610	20,900
Spain	(3/)	4	2	42
Sweden	--	--	16	71
Switzerland	--	--	4	26
Taiwan	1	3	9	114
United Kingdom	94	712	1,300	10,000
Total	795	5,700	8,730	61,300

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance and other charges incurred in bringing the merchandise into the United States.

3/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 8  
ANNUAL MATERIAL PLAN FOR CHROMIUM, 1997-98 1/

(Metric tons, gross weight)

Material	1997	Proposed plan	
		1997 r/	1998
Chromite ore			
Chemical	90,700	90,700	90,700
Metallurgical	227,000	227,000	227,000
Refractory	90,700	90,700	90,700
Chromium ferroalloy (all grades)	22,700	31,800	45,400

r/ Revised.

1/ Data are rounded to three significant digits.